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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,055	09/24/2001	Masaaki Hiroki	740756-2367	6718

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NIXON PEABODY, LLP  
401 9TH STREET, NW  
SUITE 900  
WASHINGTON, DC 20004-2128

EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/961,055

Applicant(s)

HIROKI ET AL.

Examiner

Kenneth A Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) 1,3 and 5 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 2,4 and 6-23 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/16/2004  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 2, 4, 6-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai et al 5003356 in view of Yoshino 5358810 and Yoshino 5042920 and Bahadur pgs 178-181 and 421-423.**

Wakai et al shows (figure 7) a transparent substrate 101 with a TFT (elements 102-107) with a channel region, source and drain regions with said channel region extending therebetween, a gate insulating film adjacent to said channel region, and a gate electrode adjacent to said gate insulating film (all TFTS have these); with an organic leveling layer 108a above it (polyimide listed as one of the choices of materials),

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a transparent insulator 108b above that, a pixel electrode 110 above that and a transparent electrode 115 on the opposite substrate 116 (shown in figure 5).

15. The electro-optical device according to any one of claims 1 to 11 wherein said pixel electrode is transparent. Re claim 15-16- the common electrode 115 and pixel electrodes 110 are transparent. Regarding claim 19- one of ordinary skill would have recognized that the gap between the substrates of figure 5 was for liquid crystal- so the feature is inherent. Regarding claim 23, the opposite and pixel electrodes oppose one another (the opposite opposes all of the pixel electrodes).

Lacking from the device of the primary reference is any reference to the color filter and black matrix on the opposite substrate between the electrode and substrate (location relevant to some of the claims). Yoshino discloses a flattened opposite substrate with a leveling layer over color filters which are over an organic dye containing black matrix, and which has flattening layer over color filters which are separated by an organic black matrix. Yoshino discloses that this type device has the benefit of being easily formed (abstract '810), and being reliable and easily formed (col. 4, lines 55-60 '920). Therefore it would have been obvious to one of ordinary skill, in the device of Wakai, to employ a color filter substrate of either Yoshino reference for the abovementioned advantages. Further, Bahadur teaches that the black matrix of a dyed organic material was one of the conventional types. The dyed type black matrix was well known for being less reflective and cheaper than the metallic counterparts, and would have been obvious to one of ordinary skill for that reason.

Claims 12-13 have the common electrode on the opposite substrate leveling film- as the Yoshino reference add the leveling film on the opposite substrate, the feature met by the combined references.

Regarding claim 14- lacking is the thin film transistor being top-gate type. Top gate was well known for the benefit of enabling easy self alignment, which had the benefit of low cost. Therefore it would have been obvious to one of ordinary skill, in the device of Wakai, to employ a top gate transistor in place of the bottom gate for the benefit of easy self alignment.

Regarding claim 17 and 22- further lacking is that the black stripes comprises polyimide. Bahadur teaches that it was well known at the time to make dyed color filters (including dyed black matrixes) out of polyimide. The known benefit was that it did not require a separate layer to be patterned (the layer itself could be patterned). Therefore, it would have been obvious to one of ordinary skill, in the device of Wakai et al as modified above, to employ polyimide as the dye holding layer because it did not require a separate patterning layer (a separate polyimide layer).

The electro-optical display device beign a television is a limitation of the preamble, which is evaluated as intended use and met by any device capable of providing the claimed use. As the device of Wakai or Wakai as modified above can be used to display television images, this limitation is met by the reference or reference as modified above.

Regarding claims 20-21, the reference Wakai et al and the secondary reference Yoshino '920 explicitly list polyimide as one of the choices for the layer (making the

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polyimide met for the first, but not second leveling layer). Polyimide was well known for its photo-imagability, low cost and good smoothing properties. Therefore it would have been obvious to one of ordinary skill to employ the polyimide alternative listed for the well known benefits of photo-imagability, low cost and good smoothing properties.

### ***Response to Arguments***

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, there was an overwhelming amount of evidence of the status of color filters with smoothing layers on the opposite substrate a the way of enabling color display. How one would have done it would have been to use the conventional opposite substrates shown in the conventional devices which conventionally had black matrixes with color filters over them, smoothing layers. Wakai doesn't show the opposite substrate, so one of ordinary skill would have used what was well established by the teaching of the prior art. Further, the reference cleaerly teach that color without undulations was desirable. Additionally, Wakai recognized the need for smoothing, even smoothing out the transistor side- so to not smooth out the other side and leave large undulations there would have been a

contradiction to the reference itself. As far as expectation of success, that the conventional structure opposite substrate would have worked would have been manifest. Further evidence of the overwhelming conventional nature of the structure is additionally listed below.

***Information Disclosure Statement***

Regarding the IDS statements that applicant indicates have not been considered, no papers in the file match the indicated dates. The examiner has considered all IDS statements found; if there are others that have been omitted, please resubmit them. Even if they were submitted, if they are not currently in the file there is no way to consider them.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

More evidence of the conventional nature of smoothed color filters

Tsumura et al, SID '91

Takao 4917471 and 4818075

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Parker whose telephone number is 571-272-2298. The examiner can normally be reached on M-F 10:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth A Parker  
Primary Examiner  
Art Unit 2871